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1.0 PURPOSE AND SCOPE

(7.1.1, 7.1.2, 7.1.3, 7.1.4, 7.1.5, 7.1.6, 7.1.7, 7.1.8)

This procedure defines the process for conducting hoisting, rigging and transport (load handling) activities for the Tank Operating Contractor (TOC). Load handling includes both vertical lifting and horizontal load movement. The types of lift planning/load handling activities are categorized as Ordinary, Special, and Critical Lifts.

This procedure also provides instructions to ensure ordinary lifts are performed safely and for preparing hoisting and rigging instructions (Critical Lift plans, and Special Lift plans). This procedure also defines the engineering process to ensure the structural integrity of permanently installed lifting attachments and the integrity of the lifted item.

TFC-CHARTER-31 provides the hoisting and rigging program charter. The safety procedure TFC-ESHQ-S-STD-28 also provides safety-related hoisting and rigging requirements.

Hoisting and rigging activities within the scope of this procedure must comply with DOE-RL-92-36, "Hanford Site Hoisting and Rigging Manual," as well as TFC-ESHQ-S-STD-28 and this procedure.

TFC-PLN-02 "QUALITY ASSURANCE PROGRAM DESCRIPTION" Part II – Quality Assurance Requirements for Nuclear Facility Applications, American Society of Mechanical Engineers (ASME) NQA-1 2008 and addendum 2009, are applicable to hoisting, rigging and transport for TOC. NQA-1 2.15 lift classifications (A, B and C) are incorporated into this procedure using the crosswalk developed by Engineering, Quality Assurance, Safety and Procurement in RPP-RPT-59465.

2.0 IMPLEMENTATION

The procedure is effective on the date shown in the header and only applies to newly developed lift plans.

3.0 RESPONSIBILITIES

Responsibilities are contained within Sections 4.1- 4.6.

4.0 PROCEDURE

For general requirements, see Section 3.2, "General Requirements" of TFC-ESHQ-S-STD-28.

4.1 General Instructions

Field Work Supervisor

1. Coordinate and supervise performance of lifts and load handling. Lift Classification Checklist (A-6006-727) may be used to assist in lift determination (Ordinary, Special, or Critical Lifts).

2. Verify that the hoisting and rigging contractor has inspected and evaluated all lifting points as required by DOE-RL-92-36 and that all concerns have been adequately addressed and documented in the work package. Contact a Qualified Rigging Engineer for any additional lifting point concerns.

3. Verify that required tags have been installed and the information on the tags is correct.

4. Ensure all other lifting bail tags that are not in accordance with this procedure are removed.

5. Ensure pre-job briefings are performed in accordance with TFC-OPS-MAINT-C-02.

6. Ensure all lifts are performed in accordance with applicable procedures and instructions (e.g., DOE-RL-92-36, TFC-ESHQ-S-STD-28, and this procedure).

7. For mobile crane set-up, outrigger pads shall be sized as required by RPP-CALC-56716, "Soil Bearing Capacity for Crane Loads."

8. For all Critical or Special lifts, ensure that form "Hoisting and Rigging: Lift Instructions Determination" (A-6003-884) is complete and all required signatures are present before performing the lift.

9. Verify the crane load chart rating and crane capacity in the intended configuration with the designated lead (DL) and crane operator prior to conducting the lift.

10. If the load being lifted is 80% or more of the crane's maximum rated capacity or, 90% or more of the crane's load chart capacity ensure a Critical Lift Plan is used to perform the lift.

11. Ensure that the Lift Plan (if any) is consistent with the work package.

Qualified Rigging Engineer

12. Ensure that Critical and Special Lift Plans are in accordance with DOE-RL-92-36. Any field revisions to Critical Lift and Special Lift Plans are made in accordance with DOE-RL-92-36 Chapter 3.0, Section 3.5.2 "Lift Plan Field Revisions."

13. Ensure any revisions to wording match revisions to sketches.

NOTE: Tagging of items other than cover blocks (cover plates, shield plugs, etc.) is at the discretion of the Area Engineer, and/or Design Authority.

Quality Assurance

14. For first time lifts of cover blocks, ensure metal tags are installed on each cover block listing the following information:

- Work order number
- Weight of component in pounds
- Key block (if applicable)
- Test date.

Designated Leader

15. Perform pre-lift and pre-job requirements in accordance with applicable procedures (e.g., DOE-RL-92-36, TFC-OPS-MAINT-C-02, and this procedure).

16. Perform all lifts as designed and approved.

NOTE: The following checklist is not required for critical lifts.

17. Ensure the, "Riggers and Operators Field Verification Checklist For Special Lifts" (located on A-6003-884), is completed and approved for all special lifts prior to the lift being performed and once per shift until the lift is complete.

4.2 Critical, Special and Ordinary Lifts

This section includes guidelines, rules, and requirements applicable to lifting/ load handling for performing Critical, Special and Ordinary lifts. This section also describes the planning and documentation required to perform load handling and lifts.

Load handling indicates the movement of any load weighing more than 100 pounds, with a center of gravity over three feet high. Whenever a person can be injured from a falling load, the load handling requires an evaluation by safety and, if necessary, an engineering evaluation to verify structural integrity. Prior to performing any load handling activity, the weight and center of gravity must be verified and lifting attachment or load movement method must be determined. Other pertinent features necessary for safe handling must also be provided. All lifts shall provide for compliance with applicable Federal (7.1.2), State (7.1.8), and Local (7.1.4) regulations.

NOTE: Once the Critical Lift Plan or Special Lift Plan is completely signed off, it can only be changed by the "field change" process, according to DOE-RL-92-36 Chapter 3.0, or as a document revision.

4.2.1 Critical Lifts

NOTE: A Critical Lift Plan is defined in DOE-RL-92-36 as "a step-by-step plan or work instructions …"

Facility Manager/ Project Manager

1. Determine facility or project hoisting and rigging and special load handling needs and scheduled work activities.

   A lift shall be designated "critical" based on the following criteria. In addition, any lift not subject to the following criteria may be designated critical as determined by the Facility/Project Manager, Safety SME or Hoisting and Rigging SME. Lift Classification Checklist (A-6006-727) may be used to verify lift determination:

   - Loss of control of the item being lifted would likely result in declaration of a "Site Area Emergency" or "General Emergency" as defined in the facility emergency plan or construction site emergency plan.

- The item being lifted is unique, vital to a system, facility, or project operation, and, if damaged, would be irreplaceable or not repairable.
- The cost to replace or repair the item being lifted, or the delay in having the item damaged would have a negative impact on facility, organizational, or U.S. Department of Energy (DOE) budget to the extent that it would affect program commitments.
- The item, although non-critical, is to be lifted above or in close proximity to a critical item or component.
- The load being lifted is 80% or more of a mobile crane's gross load chart rating (total maximum capacity of the crane) or 90% or more of the crane's load chart rating in any configuration for the maximum radius to be experienced.
  - The radius shall be verified by actual measurement and not by the Load Moment Indicator (LMI) alone.
- Multiple crane lifts where the load exceeds 50% of the capacity of any crane used in the lift based on the configuration and position of the crane as used for the lift.
  - Multiple crane lifts shall not exceed 75% of the individual crane capacities as configured for the lift.
- Use of Special Design Equipment or custom designed lifting hardware as determined by the Hoisting and Rigging SME.

2. If a lift is considered Critical, complete and sign the Lift Instructions Determination form (A-6003-884).

3. Designate a Person-in-Charge/Designated Leader having demonstrated supervisory experience in the hoisting, rigging, and transporting activities for which he is responsible, to the satisfaction of the cognizant management.

4. Relay to the planner, the proposed hoisting and rigging needs and requirements.

NOTE: The Facility Manager/Project Manager is the primary contact for lift determination. If Special Design Equipment is used, contact the Hoisting and Rigging Engineering SME. If high hazard work is involved, contact the H&R Safety SME.

Planner

5. Coordinate development of the Critical Lift Plan in accordance with the guidelines set forth in the "Hoisting and Rigging: Lift Instructions Determination" (A-6003-884) and this procedure.

6. Include the original Critical Lift Plan as part of the work package as the implementing document for the pre-job briefing and performance of the lift(s).

Facility Manager/Project Manager responsible for lift/Qualified Rigging Engineer/ Area Engineer

7. Complete the "Hoisting and Rigging: Lift Instructions Determination" form (A-6003-884). Once completed, this form, along with any sketches and/or additional information, will serve as the guidance and direction for preparing the Critical Lift Plan.

NOTE 1: If CLP is to be developed by a Rigging Engineer in Training, their signature is required on the form (A-6003-884), and the CLP must be checked by a Qualified Rigging Engineer.

NOTE 2: If CLP is to be developed by a Qualified Rigging Engineer, it must be independently checked by another Qualified Rigging Engineer.

Planner

8. Ensure that the completed form (A-6003-884) contains the required signatures and is delivered to the Qualified Rigging Engineer for development of the Critical Lift Plan.

Critical Lift Plan Preparer (Originator)

9. Using the completed and approved A-6003-884 form as guidance and direction, prepare the Critical Lift Plan and send draft to Hoisting and Rigging SME for review. Return completed CLP to the facility/project planner.

Planner

10. Route the completed Critical Lift Plan for approval.

11. At a minimum, ensure that the Critical Lift Plans contain signatures from the following personnel:

- Technical Approver – Qualified person having technical knowledge of the hoisting and rigging equipment, as designated by the responsible hoisting and rigging contractor
- Originator
- Qualified Rigging Engineer/Checker
- Responsible Field Work Supervisor (FWS)
- Qualified Occupational Safety Representative – normally a field safety representative
- Manager responsible for lift – normally the facility or project manager.
- Additional signatures may be added as required by the facility or project manager.

Qualified Rigging Engineer

12. Ensure that Critical Lift Plan instructions include the following statement when items may be rusted in place or otherwise potentially stuck:

    "Engineering has established the Recommended Not-To-Exceed Lifting Pull limit as xxxx lbs."

13. For Critical Lifts, if test documentation is not available for permanently installed rigging hardware, ensure that appropriate supporting calculations, design media, inspection requirements, torque requirements, and hoisting and rigging requirements are included prior to approving the Critical Lift Plan instructions.

14. Ensure the Critical Lift Plan requires an Operational-type test (to ensure structural and mechanical capability of handling components and equipment). This test shall be over the portion of the motions applicable to the handling system tested. This operational test shall be verified in the Critical Lift Plan. Verification of testing of components and equipment is also required.

15. Ensure in the Critical Lift Plan that all handling equipment in use has been subjected to inspection. Inspections include three types: frequent, periodic, and major. Evidence of inspections and the results of periodic and major inspections shall be documented.

16. In the Critical Lift Plan, ensure that the handling equipment has been maintained in good operating condition per the established maintenance program.

17. Critical Lift Plan shall contain sufficient detail, such as center of gravity, weights, sling locations, balance points, methods of attachment, maximum hoist line speeds, ground loading, and other pertinent features considered necessary for safe handling, to govern handling operations, inspection thereof, and documentation in accordance with this procedure.

18. Review the Critical Lift Plan instruction and determine if it is ready for implementation.

    a. If it meets conditions for approval, sign and return the plan/instruction to the planner.

    b. If it does not meet conditions for approval, return the plan/instruction to the planner with recommendations for revision.

Safety & Health

19. Perform functions as the "responsible Safety organization" in accordance with DOE-RL-92-36.

20. Ensure subcontractor's Critical Lift Plans and critical lifts they perform are approved by the subcontractor's internal safety organization prior to approval.

21. Review and approve by signing the Critical Lift Plan.

Area Engineer

22. Ensure the Critical Lift Plan is consistent with the work package.

Planner

23. Ensure the lift plan has the work package number or Document Release and Change Form (DRCF) number.

NOTE 1: If the lift is performed without a work package then the plan shall be released using a Document Release and Change Form (DRCF) form per TFC-ENG-DESIGN-C-25.

NOTE 2: The completed "Hoisting and Rigging: Lift Instructions Determination" (A-6003-884) form is included in the work package for information. The "Riggers and Operators Field Verification Checklist For Special Lifts," is not required for Critical lifts and should be discarded prior to entering A-6003-884 into the work package.

24. Submit the work package for approval in accordance with TFC-OPS-MAINT-C-01.

NOTE: Documentation for critical lifts is retained in the Work Order Review and Approval Checklist (WORA) application / Integrated Document Management System (IDMS) as part of the completed work package.

25. Notify rigging engineer for lift planning review.

26. Complete all applicable post-lift documentation (e.g., Lessons Learned).

4.2.2 Special Lifts

Special Lift Plans are not a "step-by-step" instruction unless noted otherwise. The Special Lift Plan provides pre-identification of load weight, load center of gravity, ground loading, lift attachment points and minimum lifting hardware (e.g., slings, below-the-hook lifting devices, shackles, spacers, softeners, etc.) capacities that will be used for the lift or series of lifts of non-critical items.

Special Lifts encompass the planned engineered lifts per the American Society of Mechanical Engineers (ASME) and lift plans per 29 CFR 1926.1432. A lift shall be designated as a Special Lift based on the following criteria. Lift Classification Checklist (A-6006-727) may be used to verify lift determination. In addition, any lift or special load handling activity not subject to the following criteria may be designated as Special as determined by the facility/project manager, Safety SME or Hoisting and Rigging SME.

Special lift(s) shall include, but are not limited to the following:

- Handling large or unusually configured loads outside a fork truck's load center (the requirements found in DOE-RL-92-36, Chapter 6, "Forklift Trucks," paragraph 6.12, item d)
- Two crane lifts and multiple crane lifts that do not meet the requirements for a "Critical Lift"

- Existing concrete blocks that do not meet the requirements of an Engineered and Marked block and are configured in a position that prohibits the use of an approved lifting device, shall be lifted by implementing Special lift criteria addressing hazards associated with a possible lift point failure (see DOE-RL-92-36, Attachment 2)
- Lifting personnel
- Use of Special Design Equipment not designated by the Hoisting and Rigging SME as a Critical Lift
- Lifts requiring special handling.

Special lift(s) may include, but are not limited to the following:

- Loads that are close to an existing building or operating equipment that if dropped or upset would cause damage to building or equipment
- Non-routine rigging configurations being used or items requiring special care because of size, weight, close–tolerance installation, or high susceptibility to damage
- Mobile crane pick and carry operations
- Working near power lines
- Multiple load line operation.

Facility Manager/Project Manager

1. Determine facility or project hoisting and rigging and special load handling needs and scheduled work activities.
2. If a lift is considered Special, complete and sign the Hoisting and Rigging: Lift Instructions Determination form (A-6003-884).
3. Relay to the area task planner the proposed hoisting and rigging needs and requirements.

NOTE: The Facility Manager/Project Manager is the primary contact for lift determination. If Special Design Equipment is used contact the Hoisting and Rigging Engineering SME. If high hazard work is involved, contact the H&R Safety SME.

Planner

4. Coordinate development of the Special Lift Instructions in accordance with the guidelines set forth in the "Hoisting and Rigging: Lift Instructions Determination" form (A-6003-884) and this procedure.
5. Include the original Special Lift Plan as part of the work package as the implementing document for the pre-job briefing and performance of the lift(s).

NOTE 1: Once completed, the following form, along with any sketches and/or additional information, will serve as the guidance and direction for preparing the Special Lift Plan.

NOTE 2: Special conditions are included in the form, which is used to capture necessary information to be included in the lift plan such as the use of spacers and spreader beams.

Facility Manager/ Project Manager responsible for lift/ Qualified Rigging Engineer/Area Engineer

6. Complete the "Hoisting and Rigging: Lift Instructions Determination" form (A-6003-884).

Planner

7. Ensure that the completed form (A-6003-884) contains the required signatures and is delivered to the hoisting and rigging contractor for development of the Special Lift Plan.

Special Lift Plan Preparer (Author)

8. Using the completed and approved A-6003-884 form as guidance and direction, prepare the Special Lift Plan and return it to the facility/project planner.

9. An Operational-type test (to ensure structural and mechanical capability of handling components and equipment) may be required in the Special Lift Plan as determined by the qualified rigging engineer. This may be accomplished by a range of motion test and should be verified in the Special Lift Plan. Verification of testing of components and equipment is also required.

10. Ensure in the Special Lift Plan that all handling equipment in use has been subjected to inspection. Inspections as include three types: frequent, periodic, and major. Evidence of inspections and the results of periodic and major inspections should be documented.

11. In the Special Lift Plan, ensure that the handling equipment is maintained in good operating condition per the established maintenance program.

12. Special Lift Plan shall contain sufficient detail, such as center of gravity, weights, sling locations, balance points, methods of attachment, maximum hoist line speeds, ground loading, and other pertinent features considered necessary for safe handling, to govern handling operations, inspection thereof, and documentation in accordance with this procedure.

Planner

13. Route the completed Special Lift Plan for approval.

14. At a minimum, ensure Special lift plans contain signatures from the following personnel:

    - Technical Approver – Qualified person having technical knowledge of the hoisting and rigging equipment, as designated by the responsible hoisting and rigging contractor

- Originator
- Qualified Rigging Engineer/Checker
- Responsible FWS
- Qualified Occupational Safety Representative – normally a field safety representative
- Manager responsible for lift – normally the facility or project manager
- Additional signatures may be added as required by the facility or project manager.

Qualified Rigging Engineer

15. Ensure that special lift plans include the following statement when items may be rusted in place or otherwise potentially stuck:

    "Engineering has established the Recommended Not-To-Exceed Lifting Pull limit as xxxx lbs."

16. For Special lifts, if test documentation is not available for permanently installed rigging hardware, ensure that appropriate supporting calculations, design media, inspection requirements, torque requirements, and hoisting and rigging requirements are included prior to approving the Special Lift Plan.

17. Review the Special Lift Plan and determine if it is ready for implementation.

    a. If the Special Lift Plan meets the conditions for approval, sign and return the Special Lift Plan to the planner.

    b. If it does not meet conditions for approval, return the Special Lift Plan to the planner with recommendations for revision.

Safety & Health

18. Perform functions as the "responsible Safety Organization" in accordance with DOE-RL-92-36.

19. Ensure that the subcontractor's Special Lift Plans and special lifts they perform are approved by the subcontractor's internal safety organization prior to approval.

20. Review and approve by signing the Special Lift Plan.

Area Engineer / Design Authority Planner

21. Ensure the Special Lift Plan is consistent with the work package.

22. Ensure that the lift plan has the work package number or DRCF number.

NOTE 1: If the lift is performed without a work package, then the plan shall be released using a DRCF form per TFC-ENG-DESIGN-C-25.

NOTE 2: The completed A-6003-884 form is included in the work package for information. Form A-6003-884, "Riggers and Operators Field Verification Check list for Special Lifts," is required for all special lifts and must be included in the work package.

23. Submit the work package for approval in accordance with TFC-OPS-MAINT-C-01.

24. Ensure sufficient, "Riggers and Operators Field Verification Checklist For Special Lifts" forms are included in the work package so that one can be filled out each shift.

NOTE: Documentation for special lifts is retained in WMS/IDMS as part of the completed work package.

25. Complete all applicable post-lift documentation (e.g., Lessons Learned).

4.2.3 Ordinary Lift

Items classified as Ordinary lifts are those that may be handled with conventional equipment using sound rigging practice and performed by trained rigging personnel. When Load Handling is performed by non-rigging trained personnel, an evaluation by safety and, if necessary, an engineering evaluation to verify structural integrity may be required. Included in this category are both construction and permanent plant items not included in Critical or Special Lift plans.

Consideration shall be given to center of gravity, weights, sling locations, balance points, methods of attachment, maximum hoist line speeds, ground loading, and other pertinent features considered necessary for safe handling.

Evidence that handling equipment is maintained in good operating condition per the established maintenance program is required for Ordinary Lifts.

4.3 Lifting Point Inspection Preparation for Critical and Special Lifts

The process for verification of lifting point structural integrity is shown in Figure 1.

Lifting point inspections shall be performed using a graded approach. Cover blocks/cover plates with permanently installed lifting points shall be inspected using Section 4.6, and evaluated using RPP-8360. Shield plugs shall be inspected and evaluated as determined by the Area engineer / Design Authority. Non-analyzed shield plugs should be lifted using a spacer. Items to be lifted will be inspected and evaluated in accordance with DOE-RL-92-36 by the hoisting and rigging contractor, including lift points under multiple (stacked) cover blocks or where lifting points are difficult to access. The need for additional inspection and evaluation is at the discretion of the rigging engineer, the Area Engineer / Design Authority, or the Engineering Discipline Lead.

Cover blocks/cover plates that will not be lifted over tank farm structures (such as underground storage tanks, catch tanks, double-contained receiver tanks) and are not considered critical or special lifts only require inspection and evaluation by the hoisting and rigging contractor per DOE-RL-92-36.

Field Crane Coordinator	1.	Ensure lift schedule is available to the Area Engineer / Design Authority and hoisting and rigging engineers.
Area Engineer/ Design Authority	2.	Follow TFC-ENG-DESIGN-D-37; provide supporting documentation to planner, as needed.
Planner	3.	Prepare a field inspection folder, if requested by the Area Engineer / Design Authority, containing pertinent lifting point drawings, Engineering Change Notices (ECNs), and a blank Lifting Point Field Inspection Report for each lifting point. NOTE: Current lift point field inspection folders are maintained in the Engineering Information File (EIF) located in IDMS.
	4.	Ensure that the work order supports the field inspection.

Sections 4.4 – 4.7 are applicable to all lift classifications (Ordinary, Special, and Critical). Lift Classification Checklist (A-6006-727) may be used to verify lift determination.

4.4 Field Inspection

Quality Assurance	1.	If required by Engineering, perform field inspections in accordance with Section 4.6. a. Ensure that traceability is maintained between inspection documents and the inspected lifting point (e.g., tags). b. Deliver the Lifting Point Field Inspection Report By QA (A-6003-765) to the Area Engineer/Design Authority.
		NOTE: Rigging hardware on the lifted items should be in compliance with ASME B30.26
Area Engineer/ Design Authority	2.	Evaluate the field inspection report (in accordance with TFC-ENG-DESIGN-D-37), and based on findings, perform the required actions to ensure that the identified lifting points can be safely used.
Qualified Rigging Engineer	3.	Evaluate corrective actions and approve ECNs in accordance with TFC-ENG-DESIGN-D-37.

4.5 Structural Analysis

Support Engineer	1.	Perform structural analysis and determine lifting points in accordance with TFC-ENG-DESIGN-D-37 and provide data to planner.
Analyst	2.	Perform structural evaluation of lifting points in accordance with TFC-ENG-DESIGN-C-10, TFC-ENG-STD-06, and RPP-8360.

Design Verification for new items should be performed by moving the lifted item through its range of motion prior to delivery on site. This should be witnessed by a TOC engineer.

Area Engineer

3. Based on the structural evaluation, determine if the lifting point(s) is (are) adequate to lift the intended item (e.g., cover block, cover plate, shield plug) and verify tags are in place as applicable (see Section 4.1, steps 3 and 10).

   a. If adequate, notify the planner and provide the planner with a copy of the analytical calculations.

   b. If inadequate, contact the Engineering Discipline Lead - Civil/ Structural, for a resolution (RPP-9514).

Analyst

4. Record analysis as required by TFC-ENG-DESIGN-C-10. Document computational calculations.

5. Release the record inspection report results and analysis per TFC-ENG-FACSUP-C-03. Upload an electronic copy of this information into the Integrated Data Management System (IDMS) Lifting Point database.

4.6 Inspection of Existing Permanently Installed Lifting Points

This section ensures that lifting points are inspected and that the inspection findings are correctly provided in the evaluation package (see Figure 2).

The Lifting Point Field Report by Engineer (A-6003-764) or Lifting Point Field Inspection Report by QA (A-6003-765) records the observed condition of existing lifting points for comparison to lifting point design documentation and supporting calculations.

Area Engineer or designee

1. Evaluate if Quality Assurance (QA) field inspection is needed.

2. If the decision is made to not use QA field inspection, photograph the lifting point(s).

3. Document observations in Lifting Point Field Report By Engineer (A-6003-764) as well as Field Inspection Document Index (A-6003-766).

4. If a decision is made to use QA field inspection (A-6003-765), prepare inspection folder.

Quality Assurance Technician

5. If measuring and test equipment will be used in the inspection process, record the manufacturer, model, serial number, and calibration status in Section 6.0 of A-6003-765.

6. Using the documents specified by the planner in the Field Inspection Document Index (A-6003-766), perform an inspection of each lifting point, e.g., cover block, cover plate, shield plug, identified.

NOTE: The lifting point inspection report, by itself, does not determine if a lifting point is safe to use.

7. To the maximum extent practicable, complete an inspection report for each lifting point.

   a. If any part of the QA inspection (A-6003-765) cannot be completed, record the reason for non-completion on the Lifting Field Inspection Report by QA (A-6003-765) and appropriately annotate the steps that will not be completed.

   b. If corrosion is present, other than superficial surface rust, inform the Area Engineer/Design Authority.

   c. Submit the completed Lifting Point Field Inspection Report to the Area Engineer/Design Authority.

Area Engineer/Design Authority

8. Review the Lifting Point Field Inspection Report by QA for completeness and accuracy.

9. Determine if additional inspection or Non-Destructive Examination (NDE) is required and specify any additional inspection or NDE in Section 5.0 of the Lifting Point Field Inspection Report by QA form (A-6003-765).

NOTE: All additional inspection and/or NDE results shall be noted and recorded on the Lifting Point Field Inspection Report.

10. Return the Lifting Point Field Inspection Report by QA to Quality Assurance if additional inspection or NDE is required.

11. Sign the Lifting Point Field Inspection Report by QA when the report is complete, and forward the report to an analyst and put an electronic copy into IDMS.

4.7 Special Load Handling

This section ensures that the requirements for handling in RPP-8360 are met and good handling practices are followed.

Prior to the handling of an item requiring special load handling, it shall have been determined that the requirements of RPP-8360 have been implemented. Handling and moving clearances shall have been investigated.

Handling shall be in accordance with RPP-8360 and the following:

1. Qualification of responsible individuals shall be in accordance with DOE-RL-92-36.

2. Handling equipment to be used shall be identified, and its selection shall be on the basis of its capability to handle the load. Loads handled shall not exceed the maximum safe handling loads of the equipment.

3. Manufacturer's instructions and conditions of operation should be followed for the handling equipment and items to be handled.

4. Work instructions should be issued for tasks that, because of their relationship to each other, must be accomplished in a certain sequence.

5. Plan should identify maximum safe loads and should describe specific methods of ensuring that safe loads are not exceeded. Load indicating devices shall be properly calibrated prior to load handling.

6. Confirm the adequacy of load support, including ground, structural system, or other support means.

4.8 Equipment used in Construction

Hoisting, rigging, and transporting equipment that is to be used exclusively during the construction phase shall comply to the requirements of NQA-1 Subpart 2.15.

4.9 Permanent Plant Handling Equipment

Permanent plant handling equipment employed for handling nuclear facility items is equipment that is intended primarily for maintenance and operation of the nuclear facility, but which may also be used for construction. It may consist of standard manufactured components, commercial standard design equipment, or special designed equipment.

All handling activities with permanent plant handling equipment is subject to the requirements of this procedure.

5.0 DEFINITIONS

Commercial Standard Design Equipment. Equipment that is available as an item of standard design and manufacture.

First time lift. Any lift performed on a cover block that does not have a weight tag installed in accordance with this procedure.

Handled Load. The weight of the item to be lifted plus the weight of any required rigging, such as lifting beam, slings, hooks, and blocks.

Handling. Hoisting, rigging, or transporting of items.

Outrigger pad. Blocking which is placed under a crane's outrigger floats to provide greater stability for the crane.

Permanent Plant Handling Equipment. Equipment that is intended primarily for maintenance and operation of the nuclear facilities, but which may also be used for construction. It may consist of standard manufactured components, commercial standard design equipment, or special designed equipment.

Permanently installed lifting point. Any lifting point that is a permanent part of the item to be lifted or a lift point that is left in place on the item to be lifted.

Qualified Rigging Engineer. An Individual qualified in accordance with one of the following:

Hoisting and Rigging Engineer – Nuclear	Course # 350949
Hoisting and Rigging Engineer – General	Course # 350948
Hoisting and Rigging Engineer	Course # 350847

Special Design Equipment. Equipment designed and built to specifications for a particular application, or for which no consensus standard exists. It may incorporate standard manufactured components and commercial standard design equipment, or may include a combination of nonstandard and standard components.

Special Load Handling. Hoisting, rigging or transporting of loads that require additional safety to protect the integrity of the load during handling due to its weight, cost, safety classification, hazard to personnel, critical schedule impact or facility damage that could result from handling mishap.

Standard Manufactured Component. Equipment that is available from several sources. This equipment is normally a catalog item, generally kept in stock, and normally used as a component of a handling system.

Temporary installed lifting point. Lifting points installed for specific lifts and subsequently removed. These lift points are considered rigging hardware and are addressed by DOE-RL-92-36 (e.g., temporarily installed swivel hoist rings and shouldered eye bolts).

6.0 RECORDS

The following records are generated during the performance of this procedure:

- Work Order package or released using a DRCF form per TFC-ENG-DESIGN-C-25, which may include the following:
  - Critical Lift Plan
  - Special Lift Plan
  - Hoisting and Rigging: Lift Instructions Determination form (A-6003-884)
  - Lift Classification Checklist (A-6006-727)
  - Lifting Point Field Inspection Report by QA form (A-6003-765)
  - Lifting Point Field Inspection Report by Engineer form (A-6003-764).

The record custodian identified in the Company Level Records Inventory and Disposition Schedules (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.

7.0 SOURCES

7.1 Requirements

1. 10 CFR 851, “Worker Safety and Health Program.”

2. 29 CFR 1926 Subpart CC “Cranes & Derricks in Construction”

3. ASME NQA-1 2008 and 2009 addendum, “Quality Assurance Requirements for Nuclear Facility Applications.”

4. DOE-RL-92-36, "Hanford Site Hoisting and Rigging Manual."

5. TFC-CHARTER-31, "Hoisting and Rigging Committee Charter."

6. TFC-ESHQ-S-STD-28, "Hoisting and Rigging Safety."

7. TFC-PLN-02, "Quality Assurance Program Description."

8. WAC 296-155 Part L "Cranes, Rigging and Personnel Lifting."

7.2 References

1. Lessons Learned Bulletin Number: IB-06-055. "Eyebolt and Swivel Hoist Ring Temperature Limitations." Nov. 27 2006.

2. RPP-8360, "Lifting Attachment and Lifted Item Evaluation, a Hanford Tank Operating Contractor Process."

3. RPP-9514, "Bail Repair and Load Testing."

4. RPP-9551, "Qualification Test of the Bail Repair Assembly & Bail Load Testing."

5. RPP-10975, "Simplified Lifting Bail Evaluation Process."

6. RPP-16330, "Standard Lifting Point Rated Load Capacities."

7. RPP-CALC-25074, "Crane Outrigger Pad loads over Waste Transfer Lines."

8. RPP-CALC-56716, "Soil Bearing Capacity for Crane Loads."

9. RPP-RPT-59465, "Compliance Crosswalk for NQA-1 Subpart 2.15 to TOC Engineering Procedures and Programs."

10. TFC-BSM-IRM_DC-C-02, "Records Management."

11. TFC-ENG-DESIGN-C-06, "Engineering Change Control."

12. TFC-ENG-DESIGN-C-10, "Engineering Calculations."

13. TFC-ENG-FACSUP-C-03, "Technical Evaluations."

14. TFC-ENG-FACSUP-C-23, "Equipment Identification and Data Management."

15. TFC-ENG-STD-06, "Design Loads for Tank Farm Facilities."

16. TFC-OPS-MAINT-C-01, "Tank Operations Contractor Work Control."

17. TFC-OPS-MAINT-C-02, "Pre-Job Briefings and Post-Job Reviews."

Figure 1. Verification of Lifting Point Structural Integrity Process.

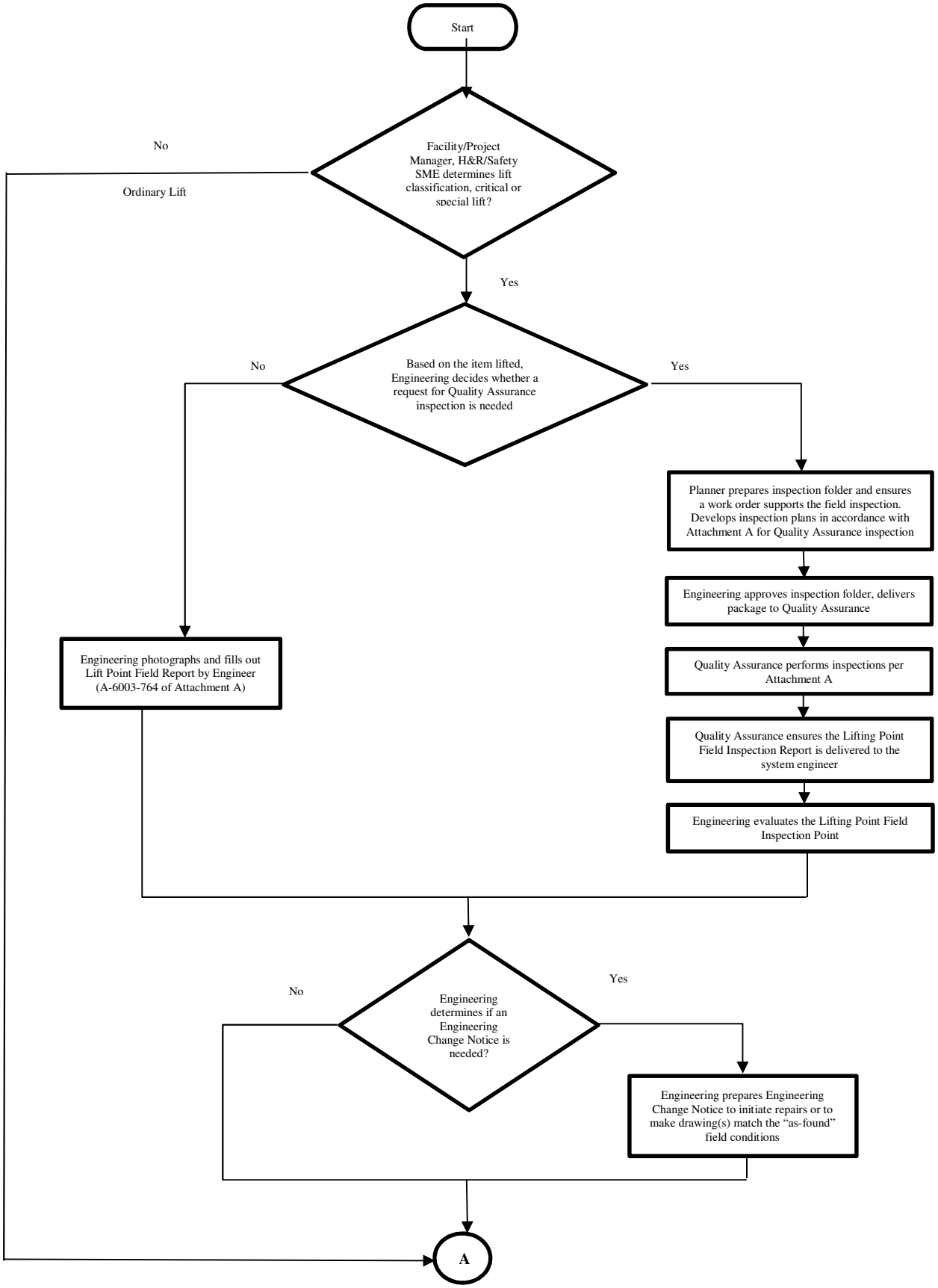

Figure 1. Verification of Lifting Point Structural Integrity Process. (cont.)

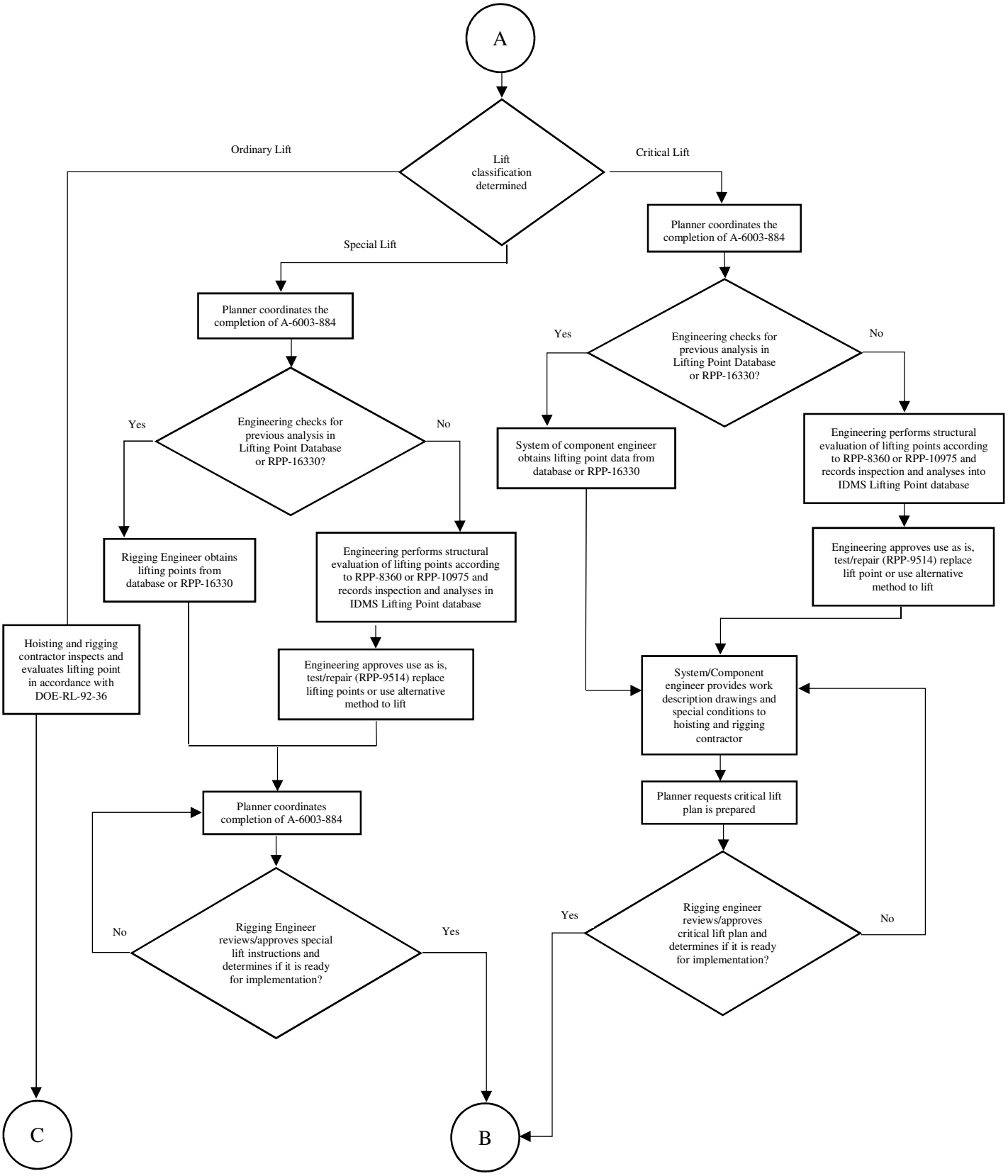

Figure 1. Verification of Lifting Point Structural Integrity Process. (cont.)

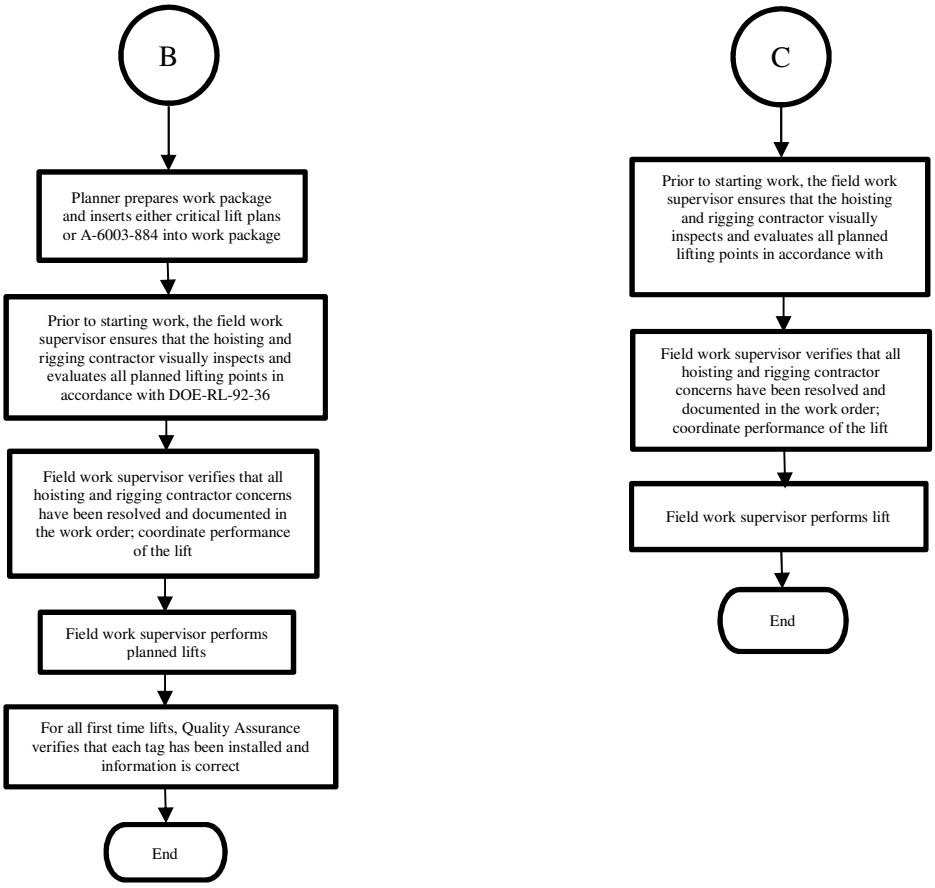

Figure 2. Inspection of Permanent Lifting Points Process.